

# EUROPEAN PATENT OFFICE

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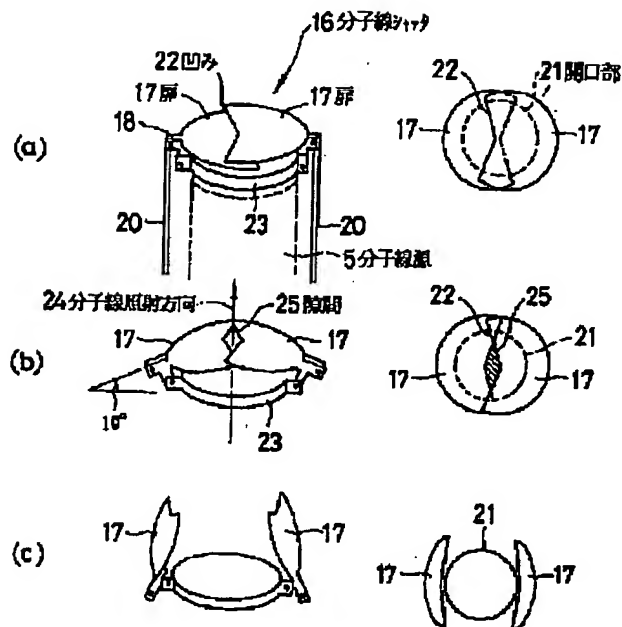
APPLICATION DATE : 25-10-95  
APPLICATION NUMBER : 07277771

APPLICANT : HITACHI CABLE LTD;

INVENTOR : WAJIMA MINEO;

INT.CL. : C30B 23/08 H01L 21/203

TITLE : MOLECULAR BEAM EPITAXIAL  
GROWTH METHOD AND APPARATUS  
THEREFOR



ABSTRACT : PROBLEM TO BE SOLVED: To continuously form epitaxially grown layers varying in compsns. without interrupting the growth by rapidly changing the intensity of molecular beams without changing the temp. of a molecular beam source.

SOLUTION: A molecular beam shutter 6 is composed of at least two sheets of doors 17 turning in a vertical direction. The opening angle of this shutter is changed by successively opening these doors 17 in a direction 24 to be irradiated with the molecular beam, by which the intensity of the molecular beam is changed. The molecular beam shutter 16 of this vertical turning type is used as the molecular beam shutter of a Ga molecular beam source 5 in the case of controlling the compsn. of the epitaxial layer of AlGaAs on a substrate. The area of the aperture 21 of the Ga molecular beam source 5 is reduced to 1/3 by controlling the opening degree of the molecular beam shutter 16, by which the intensity of the Ga molecular beams is weakened and  $\text{Al}_{0.65}\text{Ga}_{0.35}\text{As}$  is grown. In succession, the intensity of the Ga molecular beams is intensified by instantaneously and fully opening the opening degree of the molecular beam shutter 16, by which the  $\text{Al}_{0.38}\text{Ga}_{0.62}\text{As}$  layers varying in the compsn. ratio are continuously grown.

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